IN THE CLAIMS

Please amend the claims as follows.

For the Examiner's convenience, all pending claims are included below.

1. (Currently amended) A system for controlling the temperature and humidity of gas, comprising:

a contactor, including contact media, a gas inlet and a gas outlet, a liquid inlet and a liquid outlet, wherein the liquid inlet admits a liquid above the contact media and the gas inlet admits gas below the contact media, and the liquid and gas flow external to the contact media such that the gas leaves through the gas outlet in saturated state;

a heater;

a chiller for chilling the liquid, the chiller including a refrigeration system and a heat exchanger, the heat exchanger including a matrix of thermal electric chips disposed between two plates;

a gas outlet line connecting the gas outlet to the heater;

a liquid outlet line connecting the liquid outlet to the chiller, wherein the liquid flows through the liquid inlet, the contactor, the liquid outlet and the chiller;

a saturated temperature sensor associated with the gas outlet line and upstream of the heater;

a dry bulb temperature sensor associated with the gas outlet line and downstream of the heater;

a gas temperature set point;

a relative humidity set point; and

a controller, including a computer, coupled to the saturated temperature sensor, the dry bulb temperature sensor, the gas temperature set point, the relative humidity set point, and the computer, wherein the saturated temperature sensor, the relative humidity set point, and the gas temperature set point are inputs to the computer to produce a command signal adjusting the cooling rate of the chiller, wherein the dry bulb temperature sensor and the gas temperature set point are inputs to the computer to produce a command signal adjusting the heating rate of the heater, wherein the controller adjusts the heater and the chiller to deliver the gas from the heater at a desired temperature and relative humidity.

2. (Original) The system of claim 1, further comprising a sprinkler above the contact media to distribute the liquid uniformly on the contact media, a pump located between the chiller and the sprinkler to supply liquid to the sprinkler, and a gas blower to supply gas to the gas inlet.

3. (Previously presented) The system of claim 2, wherein the contactor further comprises a housing and the sprinkler includes at least one arm with a plurality of orifices along the arm and pointed between parallel and opposite the top of the contract media and wherein the sprinkler engages in self-rotation from reactive force exerted against the arm(s) from distribution of the liquid from the orifices.

4. (Original) The system of claim 1, further comprising a reservoir with a make-up inlet line to introduce liquid into the reservoir and a removal outlet line to remove liquid from the reservoir, a low sensor which generates a signal to a liquid supply means whenever the level of the liquid is low to supply additional liquid through the make-up inlet to the reservoir, a high sensor which generates a signal whenever the level of the liquid is too high to remove liquid through the removal inlet from the reservoir.

5. (Original) The system of claim 1, wherein the controller sends a signal to a liquid supply means to admit fresh liquid from the supply means at periodic times to maintain liquid purity requirements and such that the chiller can maintain the liquid at a desired temperature.

6. (Currently amended) The system of claim 1, ~~2, 3, 4, or 5~~, wherein the contact media is tower packing formed so as to have a large area/volume of material.

7. (Currently amended) A system of controlling the temperature and humidity of air, comprising:

a contactor, including a housing with contact media, an air inlet and an air outlet, a water inlet and a water outlet, wherein the water inlet admits water above the contact media and the air inlet admits air below the contact media, and the water and air flow external to the contact media such that the air leaves through the air outlet in saturated state;

a heater;

a chiller for chilling the water, the chiller including a refrigeration system and a heat exchanger, the heat exchanger including a matrix of thermal electric chips disposed between two plates;

an air outlet line connecting the air outlet to the heater;

a water outlet line connecting the water outlet to the chiller, wherein the water flows through the water inlet, the contactor, the water outlet and the chiller;

a saturated air temperature sensor associated with the air outlet line and upstream from the heater;

a dry bulb air temperature sensor associated with the air outlet line and downstream from the heater;

an air temperature set point;

a relative humidity set point; and

a controller, including a computer, coupled to the saturated air temperature sensor, the dry bulb air temperature sensor, the air temperature set point, the relative humidity set point, and the computer, wherein the saturated air temperature sensor, the relative humidity set point, and the air temperature set point are inputs to the computer to produce a command signal adjusting the cooling rate of the chiller, wherein the dry bulb air temperature sensor and the air temperature set point are input to the computer to produce a command signal adjusting the heating rate of the heater, wherein the controller adjusts the heater and the chiller to deliver air from the heater at a desired temperature and relative humidity.

8. (Currently amended) The system of claim 7, further comprising a sprinkler above the contact media to distribute the water uniformly on the contact media, a pump located upstream from the chiller to supply water to the sprinkler, and an air blower located between the heater and ~~the~~ a filter.

9. (Original) The system of claim 8, wherein the housing is cylindrical in shape, and the sprinkler includes at least one arm with a plurality of orifices along the arm and pointed between parallel and opposite the top of the contact media and wherein the sprinkler engages in self-rotation from reactive force exerted against the arm(s) from distribution of the water from the orifices.

10. (Original) The system of claim 7, further comprising a reservoir with a make-up inlet line to introduce water into the reservoir and a removal outlet line to remove water from the reservoir, a low sensor which generates a signal to a water supply means whenever the level of the water is low to supply additional water through the make-up inlet to the reservoir, a high sensor which generates a signal whenever the level of the water is too high to remove water through the removal inlet from the reservoir.

11. (Original) The system of claim 7, wherein the controller sends a signal to a water supply means to admit fresh water from the supply means at periodic times to maintain water purity requirements and such that the chiller can maintain the water at a desired temperature.

12. (Currently amended) The system of claim 7, ~~8, 9, 10, 11~~, wherein the contact media is tower packing formed so as to have a large area/volume of material.

13-26 (Canceled)

27. (New) The system of claim 6 wherein the contact media is a material having a large area/volume and is selected from the group consisting of refrigerated coils, and tubes.

28. (New) The system of claim 12 wherein the contact media is a material having a large area/volume and is selected from the group consisting of refrigerated coils, and tubes.